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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Hideo Itoh

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EXAMINER

SHOLEMAN, ABU S

ART UNIT

PAPER NUMBER

2437

MAIL DATE

DELIVERY MODE

07/06/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/529,882	ITOH ET AL.	
	Examiner	Art Unit	
	ABU SHOLEMAN	2437	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☒ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the request for re-consideration filed on 03/23/2009.
2. Claims 1,3-9,11-17,19-25 and 27-32 are presently pending. Claims 2,10,18,26 have been canceled. Claims 1,3-5,8,9,11-13,16-17,19-21, 24 and 25 have been amended.

Response to Amendment

3. Applicant's arguments, see pages 12-16, filed on 03/23/2009, with respect to the rejection(s) of claim(s) 1-8 and 25-32 under 35 U.S.C § 103(a), and 9-24 under 35 U.S.C § 102(b) have been fully considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. **Claims 1-8 and 25-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tompkin et al (Machine -verifiable diffractive features for document security)(hereinafter Tompkin) in view of YamaKawa et al (Patent number:4792685) (hereinafter Yamakawa) and further in view of Brosow (US 2005/0024955) (hereinafter Brosow).**

As per claim 1, Tompkin discloses "An authentication system comprising: "a light emitting device (Page 208, line 2-3, a laser diode) including a display means for displaying an image in which authentication information is incorporated" as (page 207, line 3-4, images are projected onto symmetrically located viewing screen) and "first optical system means for diffracting light of the displayed image at a predetermined angle for each pixel" as (page 207, line 10-12, OVD optical system is illuminated by diode , the light is diffracted into a prescribed intensity distribution which can be measured by an appropriately designed reading device, Fig . 5 , diffracted light D1-D3 is in predetermined angle); and "control means which carries out authentication using the converted image" as (Page 208, line 11-12, The OVD is illuminated and the signals of the eight detectors are demodulated and processed to allow the computer to authenticate and identify the diffractive Area code), wherein the display means and the first optical system means are arranged so that in an image which is displayed by the display means" as (Tompkin, page 204, line 7-8, teaches that OVD is optical system and the image will appear on the screen), "the image corresponding to the authentication information is diffracted (Tompkin, page 206, Fig.3, image is diffracted by OVD) and image is emitted in a direction to a display screen of the display means" as (Tompkin , page 204, line 18-19, teaches that OVD is rotated or turned by any degree [substantially perpendicular] , since OVD is variable, ordinary skill in the art were able to achieve a rotation of 90 degrees. and page 204, lines 1-11, there will be two images are always present, but often only one is projected onto a screen, only genuine image will be displaying on screen).

But fails to disclose "the image other than the authentication information is emitted in a direction substantially perpendicular to a display screen of said display means and an authentication device including second optical system means for collecting the light of the image diffracted by the light emitting device, photoelectric converting means which carries out photoelectric conversion of the collected image".

However, Yamakawa discloses "an authentication device having second optical system means for collecting the light of the image diffracted by the light emitting device" as (Yamakawa, column 2, line 62-64, teaches that the concave mirror constitutes a light collecting optical system for collecting and reflecting signal lights), "photoelectric converting means which carries out photoelectric conversion of the collected image" as (Yamakawa, column 3, line 35-38, teaches that the collected signal lights are applied to the photoelectric element where they are converted into electric signals).

Therefore, It would have been obvious to one of the ordinary skill in the art at the time of the invention was made to modify the teaching of Tompkin by including a optical system with photoelectric converter that is taught by Yamakawa because it would provide an image authentication of among images.

The combination of Tompkin and Yamakawa fail to disclose the image is emitted in a direction substantially perpendicular to a display screen of said display means.

However, Brosow discloses the image other than the authentication information is emitted in a direction substantially perpendicular to a display screen of said display means (par 0021, Bank Note is perpendicular to the view [display] with authentication point 2. Pixel [point 2] on the Bank Note is the authentication information).

Therefore, It would have been obvious to one of the ordinary skill in the art at the time of the invention was made to modify the teaching of Tompkin in view of Yamakawa by including Bank Note is perpendicular to the view with authentication points 2. The Whole Bank Note is other than the authentication information. Pixel (point 2) on the Bank Note is the authentication information that is taught by Brosow because it would provide an improvement of counterfeit proof information carrier material.

As per claim 3, Tompkin in view of Yamakawa in view of Brosow disclose "wherein the image is displayed from the light emitting device in accordance with to an inquiry signal from the authentication device" as (Tompkin, page 208, Fig 6, line 12-13, computer to authenticate the image that is illuminated from laser diode).

As per claim 4 , Tompkin in view of Yamakawa in view of Brosow disclose "wherein the first optical system means and the second optical system means are lens arrays which utilize a one dimensional light distribution" as (Tompkin, page 208, Fig 6, and page 211, line 8-9, Optics and detector array are lens arrays , those arrays produce one dimensional light distribution).

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As per claim 5, Tompkin in view of Yamakawa in view of Brosow disclose "wherein the first optical system means and the second optical system means are lens arrays which utilize a two dimensional light distribution as (Tompkin, page 204, line 12-13, two-dimensional object is recorded as a phase mask which reconstructs the object upon illumination) .

As per claim 6, Tompkin in view of Yamakawa in view of Brosow disclose "wherein the image is a hologram pattern" as (Tompkin, page 204, line 11-12, Computer generated hologram from images).

As per claim 7, Tompkin in view of Yamakawa in view of Brosow disclose "wherein the image is a graphic pattern which does not exhibit hologram effect " as (Tompkin, page 204, line 11-14, The kinoform is a CGH which puts all diffract light into the final image , if final image pattern get changed it does not effect hologram).

As per claim 8, Tompkin in view of Yamakawa in view of Brosow disclose "wherein the first optical system means is a lens array comprising a plurality of lenses, and gaps are provided between the lenses" as (Tompkin, page 211, line 8-9, The diffractive optical code of the sample using a cylindrical lens and there are gaps between lenses in the OVD).

As per claim 17, this claim is directed to an authentication device and contains limitations that are substantially similar to those recited in claim 1 above, and accordingly is rejected for similar reasons.

As per claim 18, Tompkin in view of Yamakawa in view of Brosow disclose “wherein an image corresponding to authentication information in the image is diffracted and an image other than the authentication information is not diffracted” as (Tompkin, page 208, Fig 6, The integrated diffractive area code produce a diffraction for the authentication information of the image it does not diffract whole image).

As per claim 19, Tompkin in view of Yamakawa in view of Brosow disclose “wherein an inquiry is made for requesting the outside device to output the image” as (Tompkin, page 209, Fig 7, prototype reader is inquiring for an image from the diffractive area code).

As per claim 20, Tompkin in view of Yamakawa in view of Brosow disclose “wherein the optical system means is a lens array which utilizes a one dimensional light distribution” as (Tompkin, page 208, Fig 6, and page 211, line 8-9, Optics and detector array are lens arrays , those arrays produce one dimensional light distribution).

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As per claim 21, Tompkin in view of Yamakawa in view of Brosow disclose “wherein the optical system means is a lens array which utilizes a two dimensional light distribution” as (Tompkin, on page 204, line 12-13, two-dimensional object is recorded as a phase mask which reconstructs the object upon illumination).

As per claim 22, Tompkin in view of Yamakawa in view of Brosow disclose “wherein the image is a hologram pattern” as (page 204, line 11-12, Computer generated hologram from images).

As per claim 23, Tompkin in view of Yamakawa in view of Brosow disclose “wherein the image is a graphic pattern which does not exhibit hologram effect” as (Tompkin, page 204, line 11-14, The kinoform is a CGH which puts all diffract light into the final image , if final image pattern get changed it does not effect hologram).

As per claim 24, Tompkin in view of Yamakawa in view of Brosow disclose “wherein the outside device has an optical system means for diffracting light, said optical system means is a lens array comprising a plurality of lenses, and gaps are provided between the lenses” as (Tompkin, page 211, line 8-9, The diffractive optical code of the sample using a cylindrical lens and there are gaps between lenses in the OVD).

As per claim 25, this claim is directed to an authentication method and contains limitations that are substantially similar to those recited in claim 1 above, and accordingly is rejected for similar reasons.

As per claim 27, Tompkin in view of Yamakawa in view of Brosow disclose “wherein the image is displayed from the display means in response to an inquiry” as (Tompkin, page 209, Fig 7, prototype reader is inquiring for an image from the diffractive area code).

As per claim 28, Tompkin in view of Yamakawa in view of Brosow disclose “wherein the first optical system means and the second optical system means are lens arrays which utilize a one dimensional light distribution” as (Tompkin, page 208, Fig 6, and page 211, line 8-9, Optics and detector array are lens arrays , those arrays produce one dimensional light distribution).

As per claim 29, Tompkin in view of Yamakawa in view of Brosow disclose “wherein the first optical system means and the second optical system means are lens arrays which utilize a two dimensional light distribution” as (Tompkin, page 204, line 12-13, two-dimensional object is recorded as a phase mask which reconstructs the object upon illumination).

As per claim 30, Tompkin in view of Yamakawa in view of Brosow disclose “wherein the image is a hologram pattern” as (Tompkin, page 204, line 11-12, Computer generated hologram from images).

As per claim 31, Tompkin in view of Yamakawa in view of Brosow disclose “wherein the image is a graphic pattern which does not exhibit a hologram effect” as (Tompkin, page 204, line 11-14, The kinoform is a CGH which puts all diffract light into the final image , if final image pattern get changed it does not effect hologram).

As per claim 32, Tompkin in view of Yamakawa in view of Brosow disclose “wherein the first optical system means is a lens array comprising a plurality of lenses, and gaps are provided between the lenses” as (Tompkin, page 211, line 8-9, The diffractive optical code of the sample using a cylindrical lens and there are gaps between lenses in the OVD).

11. Claims 9, and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tompkin et al (Machine -verifiable diffractive features for document security)(hereinafter Tompkin) and further in view of Brosow (US 2005/0024955) (hereinafter Brosow).

As per claim 9, Tompkin discloses a light emitting device comprising: display means for displaying an image in which authentication information is incorporated” as (page 207, line 3-4, images are projected onto symmetrically located viewing screen, So Screen is a display means. And page 206, Fig .3, genuine image will display on screen) ; and “an optical system means for diffracting light of the displayed image at a predetermined angle for each pixel” as (page 207, line 10-12, OVD optical system is illuminated by diode , the light is diffracted into a prescribed intensity [degree of angle] distribution). wherein the display means and the first optical system means are arranged so that in an image which is displayed by the display means” as (Tompkin, page 204, line 7-8, teaches that OVD is optical system and the image will appear on the screen), “the image corresponding to the authentication information is diffracted as (Tompkin , page 204, line 18-19, teaches that OVD is rotated or turned by any degree which could be substantially [substantially is indefinite] , since OVD is variable, ordinary skill in the art were able to achieve a rotation of 90 degrees. and page 204, lines 1-11, there will be two images are always present, but often only one is projected onto a screen, only genuine image will be displaying on screen).

But fails to disclose “the image other than the authentication information is emitted in a direction substantially perpendicular to a display screen of the display means”.

However, Brosow discloses the image other than the authentication information is emitted in a direction substantially perpendicular to a display screen of said display means (par 0021, Bank Note is perpendicular to the view [display] with authentication

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point 2. the Whole Bank Note is other than the authentication information. Pixel [point 2] on the Bank Note is the authentication information,).

Therefore, It would have been obvious to one of the ordinary skill in the art at the time of the invention was made to modify the teaching of Tompkin in view of Yamakwa by including Bank Note is perpendicular to the view with authentication points 2. The Whole Bank Note is other than the authentication information. Pixel (point 2) on the Bank Note is the authentication information that is taught by Brosow because it would provide an improvement of counterfeit proof information carrier material.

As per claim 11, Tompkin in view of Brosow disclose " wherein the image is displayed from the display means in accordance with an inquiry signal from an outside device" as (page 204, line 8-11, The same images will appear on the screens and the reconstructed image is determined by the carrier frequency and , hence , the recording geometry. Two images are always present, but often only one is projected onto a screen).

As per claim 12, Tompkin in view of Brosow disclose "wherein the optical system means is a lens array which utilizes one dimensional light distribution" as (page 208, Fig 6, and page 211, line 8-9, Optics and detector array are lens arrays , those arrays produce one dimensional light distribution).

As per claim 13, Tompkin in view of Brosow disclose “wherein the optical system means is a lens array which utilizes two dimensional light distribution” as (page 204, line 12-13, two-dimensional object is recorded as a phase mask which reconstructs the object upon illumination).

As per claim 14, Tompkin in view of Brosow disclose “wherein the image is a hologram pattern” as (page 204, line 11-12, Computer generated hologram from images).

As per claim 15, Tompkin in view of Brosow disclose “wherein the image is a graphic pattern which does not exhibit hologram effect” as (page 204, line 11-14, The kinoform is a CGH which puts all diffract light into the final image, if final image pattern get changed it does not effect hologram).

As per claim 16, Tompkin in view of Brosow disclose “wherein the optical system means is a lens array comprising a plurality of lenses, and gaps are provided between the lenses” as (page 211, line 8-9, The diffractive optical code of the sample using a cylindrical lens and there are gaps between lenses in the OVD).

Conclusion

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4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abu Sholeman whose telephone number is (571)270-7314. The examiner can normally be reached on Monday through Thursday 9:00 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on (571)272-3865. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

July 2, 2009

Abu Sholeman
Examiner
Art unit 2437

/Emmanuel L. Moise/
Supervisory Patent Examiner, Art
Unit 2437